Deviance of Syntax in Oral Language and Oral Reading Behaviour

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ABSTRACT

The major hypothesis of this paper is that any deviance in syntax present in oral language will be evident in oral reading behaviour. Using Lee and Canter's Developmental Sentence Scoring technique (1971) and Y. Goodman and Burke's Reading Miscue Inventory (1972) linguistic competence was established in three male children, ages 10 to 11, patterns of strengths and weaknesses in reading were determined, and the relationships that were established, were examined. Results of the study indicate that oral language behaviour is closely tied to oral reading behaviour. This type of approach can be used as a basis for a diagnosis of a reading difficulty and then a prescription for language and reading skills.

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Need

All human beings develop language with varying degrees of skill unless there is some gross disability. In a short period of time a child becomes a "full and vocal member of the language community in which he lives" (Oates, 1972, p. 127).

But, "because speech is universal and reading is not, we may suppose that the latter is more difficult and less natural" (Shankweiler & Liberman, 1972, p. 293). Emerging from contemporary studies is the observation that language is acquired in a rather fixed order although the rate of acquisition may vary considerably due to individual and environmental factors. As in learning to talk the child learning to read needs all the strategies right from the beginning (K.S. Goodman, 1967).

There are developmental stages at which recognition of certain grammatical patterns is possible without being able to use the pertinent rules as yet. Thus a child may understand the meaning of a sentence couched in the passive voice, "The dog is fed by the boy." But when asked to repeat it, the child will say, "The boy feeds the dog." (Lenneberg, 1964). Instead there is a synergistic coming together of children's knowledge of many different aspects of language content, form and use (Bloom & Lahey, 1978), where the child treats the sentence in terms of its meaning.

This paper will focus on language as a behaviour, where language is defined as "knowledge of a code for representing ideas about the world through a conventional system of arbitrary signals for communication" (Bloom & Lahey, 1978, p. 23). There are three basic dimensions to language in this definition. They are:

1. Language content. What individuals talk about or understand in messages.
2. Language form. The shape or sound of messages in terms of the elements in the message and the ways that the elements are combined.
3. Language use. The reasons why individuals speak and the ways in which speakers choose among alternative forms of a message according to what they know about the listener and the context (Bloom & Lahey, 1978, p. 11-21).

The integration of the above makes up language competence or knowledge, which can be conceived as a plan for the behaviours involved in speaking and understanding messages. As the plan directs the individual's behaviours, it is, itself, evolving and changing as a result of these behaviours.

The syntactic component of speech will be examined in this paper where syntax refers to rules (ordered ways in which sentences are formed) for placing words in specific order (Chomsky, 1972), and the relationships among the elements in the utterance. An example of what some of these structural signals are, and how they operate can be seen by considering a sentence such as: The iggle squiggs trazed

wombly in the harlish goop. Only three words of the nine are recognized. Nevertheless to any native speaker of English the structure is clear, however obscure the meaning may be. It is almost unmistakeably marked by these three words, the, in, the, and by the four word fractions -s, -ed, -ly, and -ish (Gleason, 1955, p. 150).

An increasing number of studies (J. B. Carroll, 1966, 1970; Y. Goodman, 1976; Goodman & Burke, 1969; Ryan & Semmel, 1969; Wardhaugh, 1971) strongly suggest that there are significant relationships between the reading process and a child's functional language abilities, assuming that reading is an active language process involving constant interaction between the reader and the text.

Reading is a mental process, a dynamic active process and it can be taught that way. According to Stauffer (1970)

> reading tasks structured carefully both syntactically and semantically may reveal the "how" of the reading - thinking act and the "why" of different strategies for attainment and assimilation. Developmental stages may be determined and reading materials prepared to foster growth in subtle and mobile skill acquisition and functioning.

Thus he suggests that reading is a cognitive function and teaching strategies that can elevate cognitive effectiveness, will also improve reading, which like all language processes, involves syntax and semantics.

Reading specialists have for a long time attempted to explain reading in terms of meanings and the concrete symbols of speech

and writing. This has led to the definition of reading as getting meaning from written symbols, or to the opposite extreme of phonics in which reading is defined as associating written and spoken symbols. With the mediation of linguistic forms the process of reading can be redefined as "the identification of linguistic forms through viewing the graphic symbols by which they are conventionally represented in a given language" (Reed, 1970, p. 19). Kolers (1970) showed that the skilled reader treated words as symbols and was operating on them in terms of their meanings and their relations to other symbols. In 1979, Kolers stated that words, like many other objects are ambiguous and are seen in many aspects; in all the aspects that their reader can command in the time available and as purpose requires - graphemic, syntactic, semantic, temporal, locative, etymological, contextual, and so on. The various kinds of analysis interact, the person's many skills aiding each other in a manner rich in feedback (Kolers & Perkins, 1975).

Reading as defined by K. S. Goodman (1970) is a psycholinguistic guessing game involving an interaction between thought and language. Efficient reading results from skill in selecting the fewest, most productive cues necessary to produce guesses which are right the first time. These guesses are based on sampling techniques, control over language structure, broadened experiences, and increased conceptual development.

Recent studies (Bennett, 1942; Biemiller, 1970; Clay, 1968; K. S. Goodman, 1968; Weber, 1970) have shown that most children will correct their own errors when dissonance in grammar and/or meaning

occurs. These studies suggest that all readers utilize linguistic skills when reading, although there is much variation of the individual's utilization of linguistic strategies.

The most widely used tests of children's reading ability provide primarily an indication of the reading grade level of the student. They do not measure qualitative differences between readers at the same grade level. They do not indicate strengths and weaknesses of the individual's reading strategies. Any deviations from the text by the reader are marked as errors whether or not they actually weaken the meaning of the text.

In many reading programs the child having difficulty in reading is frequently given more help in phonic skills, word lists to study, and very often material to read beyond his competence. Thus the reader will learn word attack skills for isolated words, memorize word lists, and stifle language development because of an inability to discuss the reading matter.

Teachers seldom take advantage of the reading strategies that children have already acquired and which they exhibit in their oral language. What actually happens to the child with a reading problem is ineffective teaching. Oral language skills are rarely considered (K. S. Goodman, 1972).

The findings of the studies cited above suggest both that a high correspondence exists between oral language and reading and hence that a different approach to children with reading difficulties is needed.

An analysis of oral reading errors can be used as a diagnostic tool both for regular and remedial reading, and can provide an unbiased diagnostic tool able to recognize the difference between the reading process of individuals, including retarded, normal, or superior readers.

Thus an examination of data from a speech sample that estimated to what extent the child has generalized grammatical rules and data from a miscue analysis or reading may provide more insight into the development of syntactic competence in speech and syntactic errors in reading.

Purpose

The purpose of this study is:

1. to determine linguistic competence using Lee & Canter's Developmental Sentence Scoring procedure, a clinical procedure for estimating syntactic development in children's spontaneous speech (1971),
2. to determine patterns of strengths and weaknesses in grammatic relationships using the Reading Miscue Inventory (1969),

and

3. to use these to examine any relationships between the use of syntax in oral speech and reading

in three native speakers of English, having normal intelligence and no apparent difficulties, but having a prediagnosed language disability, that is, low verbal and high performance scores of the WISC.

A better understanding of the relationships between language and reading may help lead the way to more effective teaching of reading and remedial procedures.

Hypothesis

The major hypothesis of this paper is that any deviance in syntax present in oral language will be evident in oral reading behaviour.

Significant relationships have been shown to exist between a child's fundamental language abilities and the acquisition of the reading process (R. Ruddell, 1970). Once the linguistic patterns of syntactic development of the subject have been determined and the reading miscues examined, a relationship of syntactic patterns in oral language and oral reading will be evident.

Overview

In chapter two, the literature search will be limited to a review of the studies concerning scales to measure spontaneous speech, studies concerning the use of Lee and Canter's Developmental Sentence Scoring technique, a description of the psycholinguistic model of reading proposed by K. G. Goodman (1968), studies based on the relationship between oral language and the reading process, and studies based on oral reading errors.

The design of the study will be described in chapter three. Samples of spontaneous speech will be taken from three males, 10 to 11 years old, having high performance and low verbal scores according to the WISC. These students will then be administered the Reading Miscue Inventory (RMI).

The Developmental Sentence Scoring technique will then be used to analyze the sentences and a score will ultimately be obtained. In the analysis of the RMI special attention will be paid to

the sections dealing with correction, grammatical acceptability, and semantic acceptability.

A comparison of the data from the Developmental Sentence Scoring (DSS) technique and the RMI may support the hypothesis that people read the way they speak.

A major limitation of this study is its small sample size. It allows a descriptive analysis for individual performances but precludes a vigorous statistical analysis and generalizations comparing language and reading performance. This limitation does not permit a definitive statement, but it does indicate likelihood.

CHAPTER II: REVIEW OF LITERATURE

Efficient reading results from the skill in selecting cues. The more advanced a story, the more its syntax, more fully formed language and increased load of meaning makes it possible to use graphic cues and supplement them with syntactic and semantic information (K. S. Goodman, 1976). Studies have shown that beginning readers use their knowledge of grammar to narrow down the alternative words that compete for a given sentence slot as they do in understanding speech (Weber, 1970).

Notable in much of the research is that most educators concerned with reading have limited their studies almost exclusively to methodology of reading and have failed to take into account the various levels of linguistic structure or to indicate how closely an erroneous response approximates an expected response on any of these levels (Weber, 1968). Inaccurate responses are usually considered indications of perceptual problems or a poor sight vocabulary rather than responses based on the reader's expectations formed as a result of his knowledge of the constraints imposed by a grammatical structure. Thus the reader's strengths may not be recognized or used as a basis for subsequent remedial instruction, and his apparent weaknesses may be over-emphasized or even incorrectly assumed to be the basis for the reading difficulty.

This search is limited to a survey of studies concerning scales to measure spontaneous speech, studies concerning the use of Lee and Canter's Developmental Sentence Scoring (DSS) technique, a description of the psycholinguistic model of reading proposed by

K. S. Goodman (1968), studies based on the relationship between oral language and the reading process, and studies based on oral reading errors.

Scales to Measure Spontaneous Speech

Most of the language research in the literature is based on experimental designs such as:

1. Repetition of sentences containing various structures.
2. Identification of a picture among a set of pictures which matches an orally presented model sentence containing a certain structure (for example, show the picture where "The boy is not sitting." for the negative structure).
3. Adding the correct inflection when given either real words or nonsense stems (Slobin, 1967).

The problem is to devise techniques which examine the child's linguistic competences rather than his ability or inclination to follow instructions. Another problem, according to Menyuk is that in any test situation it is difficult to obtain an adequate assessment of the child's linguistic competence. His ability or lack of ability to comprehend or produce certain grammatical structures in these tasks may be due to the stimulus materials used, and his success or failure does not predict his competence with other related structures. Until such materials have been standardized and tested for reliability and our knowledge of the correlations between competences with various grammatical structures and operations

is more complete, a "safeguard" often used is to observe the relationships between performance in these tasks and the child's spontaneous production of utterances (Menyuk, 1972, p. 127-8).

The most complete description of spontaneous speech would be provided by writing a grammar for each child's language. But, since this is not possible because of limitations of time or expertise, a more feasible description reduces particular aspects of child speech to numbers.

Three measures of child speech frequently used are:

1. Mean Length of Utterance (MLU). A natural sequence of utterances, 50 - 100 is used. The unit counted is the morpheme rather than the word, for example: Utterance is pull, number of morphemes is 2. The unit counted is the morpheme rather than the word. MLU is an indirect measure of complexity. It is computed not because utterance length is valued but because increasing length is an index of increasing linguistic complexity. Validity suffers because of the determination of what a morpheme is. A morpheme is defined as the smallest meaningful unit, and meaningfulness is relative to the individual speaker. Reliability also suffers because a situational influence is noticeable, for example, various pictures elicit different kinds of responses. As well, the results of the MLU do not give any information about what the child actually can or cannot do with language.

2. Weighted Scales. A developmental scale based largely on the sequence with which particular forms are acquired and then numbers

are assigned to points on that scale, a weighted scale assumes that any developmental characteristic will either stay at the same level or increase. Questions about the validity of such a scale concern transformations as an index of complexity, the assignment of numbers to the scale, and differences among dialects.

3. Frequency Counts. The informativeness of frequency counts of specific linguistic features depends on the linguistic and psychological validity of the features counted, and on the kinds of inferences made. The problem is how does one decide when to credit a child with a particular bit of linguistic knowledge.

Ideally, a child's language development should be evaluated in terms of his progress toward the norms for his particular speech community (Cazden, 1971, p. 257). A scale that accepts alternate forms based on a sequence of emergence is superior to one that can be applied cross-culturally. The issue of "dialect-fair" scales of language development may eventually become as significant in the future as that of "culture-fair" tests of intelligence has been in the past.

There are still many questions that can be raised about language sampling procedures. Some current research problems are:

1. The need for more accurate and complete normative data. Without this it is difficult to know how far the child's performance deviated from the norm.

2. Elicitation of the language sample. The lack of a standard method for eliciting a language sample elicits varying qualities of language samples.

3. The relationship between psychological and linguistic complexity.

Use of Lee and Canter's Developmental Sentence Scoring (DSS) Technique

Oral language is frequently the most important single factor used to evaluate a child's growth and development (Longhurst & Schrandt, 1973, p. 240). Because of this it is important to select the evaluation tool best suited to the situation.

Lee and Canter's Developmental Sentence Scoring Technique is a clinical procedure for estimating syntactic development in children's spontaneous speech. It is based on a developmental scale of language acquisition to provide a weighted measure by which one might compare an individual child's language, thereby seeing whether a child is developing normally, as well as locating specific areas of deficit.

Dorothy Tyack (1972) discusses the DSS procedure as an example of how psycholinguistics is beginning to enter the language clinic. Valuable aspects of the procedure are that (1) it is based on actual language performance, (2) observations on systematic ways to collect children's sentences are carefully stated, as well as their descriptions of pitfalls which may occur in transcription and interpretation and importantly (3) the use of contextual information in analyzing sentences. There is also a clear description of the English verb system. Tyack's main criticism of this work is that although it looks to linguistics for descriptions of children's language, the analysis suffers from a failure to translate into practice transformational grammarians' concern with the sentence as a basic unit. The DSS focuses on isolated words and forms. An example of this is that a sentence must be complete (having a noun and a verb in a 'subject-predicate relationship'). By this standard the boy ate a cookie is a

sentence, whereas the boy riding a bike my brother is not (although it contains a relative, and is a more complex structure than the first sentence).

In a comparison of four procedures of linguistic analysis of children's speech, Longhurst and File (1977) found Lee and Canter's (1971) DSS procedure simple to apply. However, like Tyack (1972) there was disagreement about the definition of Lee's "sentence". They felt that DSS does not extend the sentence point strategy far enough to hold the validity that other methods of describing features of arrangements does. They also found that DSS tends to describe the subject's performance at a lower level than the other procedures or pretests indicated because although certain utterances should have been classified in specific categories, DSS rules disallow their classification, while there were other ambiguous instances where one entry could be classified in more than one way.

Bloom & Lahey (1978) state that many grammatical features are not included in the DSS analysis. It is implied that certain form types such as arricles, plurals, and possessives are developed early and so probably would be goals comparable to other first level goals. The sequence of adverbs, prepositions, embedded sentences, and other features is not discussed and so would have to be determined by other information. They feel, nevertheless, that the information while limited in these ways, does provide a means of describing a language sample and an hypothesis for sequencing these language behaviours for children in later stages of language learning.

A Description of the Psycholinguistic Model of Reading Proposed by K. S. Goodman (1968)

Psycholinguistics brings together the theoretical and empirical tools of both psychology and linguistics to study the mental processes underlying the acquisition and use of language (Slobin, 1974). Psycholinguists are thus interested in the underlying knowledge and abilities which people must have in order to use language and in order to learn to use language in childhood. Their problem is to postulate underlying structures and processes which may account for apparent orderliness in observed behaviour. Studies of the level of language have shown both the great extent to which children have control over the grammatical aspects of oral English when they enter school as well as their progress in school.

K. S. Goodman (1968) has provided one psycholinguistic definition of reading:

> Reading is the receptive phase of written communication. In written language a message has been encoded by the writer in graphic symbols spatially distributed on the page. The reader does not merely pass his eyes over a written language and receive and record a stream of visual perceptual images. He must actively bring to bear his knowledge of language, his past experience, his conceptual attainments on the processing of language information encoded in the form of graphic symbols in order to decode the written language. Reading must, therefore, be regarded as an interaction between the reader and the written language, through which the reader attempts to reconstruct a message from the writer (p. 15).

He has developed a complex model of the reading process where he has divided reading proficiency into three levels. The child at the first level perceives the graphic symbol, recodes it for aural input, recodes it again into a familiar language symbol, and then decodes it into meaning. Here the child is taught strategies for recoding, phonics,

phonemics, and/or whole word. Goodman feels that too much emphasis given to word attack skills in quantity beyond what is needed to recode may actually distract the child from decoding written language for meaning, which is the real end.

At the second proficiency level the child is able to recode from the graphic symbols to oral language and then to decode to meaning. The reduction of the aural component may reflect an increasing awareness and acceptance by the student that the written language is very similar to his spoken language.

At the third proficiency level the graphic symbol is decoded directly upon visual input. The proficient reader, when reading aloud at this level extracts meaning from the deep structure and encodes this information into speech.

Goodman calls this model a psycholinguistic guessing game. Reading is a total process where one comes to the text with prior knowledge and then uses this knowledge to test hypotheses which one forms in the process of reading. The reader confirms or rejects his hypotheses as he reads to allow him to form new ones. The reader takes an active part in the reading process rather than passively being stimulated by graphic representation.

Studies Based on the Relationship Between Oral Reading and the Language Process

Significant relationships exist between a child's functional language abilities and the acquisition of the reading process. Because different skills in the reading process have to be emphasized at different times, depending upon the individual child, a child can reach mastery at different periods in his development. J. B. Carroll (1970) specifies

eight components of the reading skill. They are:

1. The child must know the language that he is going to learn to read.

2. The child must learn to dissect spoken words into component sounds.

3. The child must learn to recognize and discriminate the letters of the alphabet in their various forms.

4. The child must learn the left-to-right principle by which words are spelled and put in order in continuous text.

5. The child must learn that there are patterns of highly probable correspondence that will help him recognize words that he already knows in his spoken language or that will help him determine the pronunciation of unfamiliar words.

6. The child must learn to recognize printed words from whatever cues he can use - their total configuration, the letters composing them, the sounds represented by those letters, and/or the meanings suggested by the context.

7. The child must learn that printed words are signals for spoken words and that they have meanings analagous to those of spoken words. While decoding a printed message into its spoken equivalent, the child must be able to apprehend the meaning of the total message in the same way that he would apprehend the meaning of the corresponding spoken message.

8. The child must learn to reason and think about what he reads, within the limits of his talent and experience.

He states that the essential skill in reading is getting meaning from a printed or written message. This is similar in many ways to

getting meaning from a spoken message but there are differences because the cues are different.

Carroll (1966) does not believe that learning to read can be made to occur in complete imitation of learning the native language. He assumes that the general laws of perception and learning discoverable in both human and animal species will eventually be able to account for the learning of language. He feels that native language learning could exemplify certain processes that could be imitated in setting up conditions whereby a child can learn to read and write. Some differences between the two processes are:

1. Language is learned, but reading is taught.
2. In language learning the child is presented with the full complexity of the language irregularities whereas in reading instruction there is careful avoidance of anything like irregularity until the child has mastered what is considered to be regular.
3. In language learning, learning to understand speech and learning to speak are parallel and related processes whereas reading is generally taught to a certain level of mastery before the start of training in writing.
4. Learning a language is vital to the child's comfort and satisfaction whereas reading can be learned as an ancillary coding skill.

As well he notes some similarities:

1. The system of writing has a structure which can be described in a manner somewhat analogous to that of the system of the

spoken language.

2. There can be similar processes of "correction" in the learning of the spoken language and the learning of the written language.

He concludes:

> ...a proper balance between careful sequencing or programming and the provision of rich natural language test presentations can, I believe, produce more rapid progress than the use of either alone. What I have tried to show is that while we must recognize the importance of and accept the responsibility for consciously planning and sequencing the presentations we make in teaching, there are certain features of native language learning that can be built into our procedures(p. 582).

Wardhaugh (1971) points out some important differences between language acquisition and beginning reading. They are:

1. Language is acquired gradually, with the process having no conscious beginning, yet probably never completed. Reading has a sudden onset.

2. The level of anxiety in which learning to read may be high for not only the child, but also the parent and teacher. Whereas little anxiety is shown during the process of learning to talk.

3. Reading instruction is formal and deliberate versus language which is learned informally and unconsciously from a wide range of stimuli.

4. The visual reinforcement for learning to read are often irrelevant for beginning readers. Whereas the benefits of learning to speak are enormous.

5. The two activities depend upon the acquisition of different skills, for example, in reading visual discrimination skills are important.

6. The methods of instruction - imitation, repetition, control of stimuli, correction, and expansion - are the same but their importance is not.

7. Language acquisition does not stop at age six, and some kinds of acquisition overlap with learning to read.

Generally, Wardhaugh and J. B. Carroll feel that the theories of language acquisition available today are largely irrelevant in deciding issues in beginning reading instruction or in devising models of the reading process. Moreover, reading failure cannot easily be linked to deficiencies in language acquisition, for children who are asked to learn to read are almost invariably well on the way to linguistic maturity (Wardhaugh, 1971).

Ryan and Semmel (1969) demonstrate that language processing strategies are utilized by the reader even in the actual perception of printed material. They theorize that reading requires a special use of language, and hence that the ability to learn to read is rule governed and necessitates going beyond the simple identification of lexical items or words in sequences. They feel that reading is an active language process in which the reader uses his cognitive and linguistic knowledge to reproduce a probable utterance from a careful sampling of cues to match that prediction for appropriateness.

Y. Goodman (1976) states that young beginning readers treat reading as if it were language. Young readers make use of both the grammatical and semantic systems of language as they read. Early

research showed that when provided with written language context, young readers could read at least two-thirds of the words which they were unable to read if those same words were provided in isolated lists. She feels that if children know from the beginning of their reading is similar to listening, then they can use their language sense to predict, to reread and correct, or to continue reading and search for additional cues if their predictions don't work out. Meaning can be constructed as they read.

K. S. Goodman (1969) states that research in reading is impossible without scientifically based psycholinguistics. Continuing research aims to understand the full range of variation in the operation of the reading process and of the strategies that readers use.

Y. Goodman and Burke (1969) state that there are four principles to be considered when dealing with children's reading problems. They are:

1. Children can be sophisticated about the grammatical structure of the language of their speech community.
2. Children bring their knowledge of language to the task of reading.
3. Reading is a process which involves the interaction of language and thought.
4. Reading is a process which involves the integration of the child's grammatical system with his knowledge of the world and the printed page.

Studies Based on Oral Reading Errors

Bennett (1942) in one of the first studies of oral reading errors,

in an analysis of 34,274 errors in word recognition and pronunciation of 237 basic words read in context made by retarded readers in the middle grades as they progressed through 30 remedial lessons, indicates that the beginning and ending of words are most frequently used as cues in word recognition and that there is almost a two to one chance that the beginning of the word will be more potent as a dominant cue than the ending. She states that errors do not occur in a haphazard way, but are governed by the context in which the stimuli are incorporated, and by unfortunate learning habits which the pupil has developed in the process of reading. A pronounced characteristic of pupils retarded in word recognition seems to be the tendency not to inhibit associated responses until a word is clearly seen in all its parts - beginning, middle, and ending (p. 38).

A study of oral reading errors done by K. S. Goodman (1968) categorized the reading miscues of 12 fourth and fifth grade children, reading the same sixth grade stories according to the Goodman Taxonomy of Reading Miscues (1969). Each miscue was categorized under all pertinent variables and the results were presented under four focal points. This paper is concerned with that portion of the data dealing with the relationship of syntactic information to miscues and corrections. In comparing the fact that acceptability results for 96% of the miscues, there is basis for the argument that syntactic clues are more basic in reading than are semantic clues. In general, the inter-play of syntactic, semantic, and graphophonic information in the reading process of these youngsters is confirmed. Particularly the study has demonstrated

the extent that syntactic information is used by readers.

Clay (1968) shows evidence that the error behaviour of children is guided by the syntactic framework of the sentences read rather than by the phoneme-grapheme relationships in the words. During weekly observations of 100 five-year-old children, 10,525 reading errors were recorded. All substitution errors were analyzed for structural equivalence with the textual stimulus. Some relations are reported between errors and self-corrections on the one hand, and the morpheme class or morpheme-sequence class characteristics of the text on the other. Generally the analysis indicated that the young child's guesses at points of uncertainty in his reading tend to be dominated by his control over the syntax of his language. She states that spontaneous correction of errors in reading presumably stems from an awareness, however vague, that not all the relationships between words are a neat fit.

Weber (1970) in a study of errors during oral reading described the sensitivity of first-graders to grammatical structure in an attempt to assess the grammatical dimension of their reading performance. She concluded that beginning readers use their knowledge of grammar to narrow down the words that compete for a given sentence slot, just as they do in understanding speech. She also found that weaker readers do not differ from their more skilled classmates in respect to the use of grammatical constraints for the identification of words in a string. It appeared as though the children resisted uttering a sequence that did not conform to an acceptable sentence. However, only better readers, having made errors that did not fit into the grammatical context of the written sentences

consistently demonstrated their rejection of ungrammatical sentences by correcting themselves. As children became more skilled readers there seemed to be an increase in the use of graphic information.

In a study of first graders using a basal reader method, Biemiller (1970) noted that a majority of errors made by readers who were progressing poorly seemed to be contextually constrained, while most of the errors made by readers who were progressing well appeared to be non-responses. (Contextual information is information the reader has, that is, knowledge of syntactic constraints and of subject matter along with the immediately preceding context.)

Summary

Much of the research cited above suggests that there is still ample left to be done in terms of language sampling procedures and methods (Cazden, 1972; Menyuk, 1972). The DSS procedure, based on psycholinguistic research (Tyack, 1972) appears to be one of the less complicated procedures to use (Longhurst & File, 1977). Its main drawback is that its analysis of the sentence is open to question (Bloom & Lahey, 1978; Tyack, 1972).

Significant relationships are shown to exist between a child's functional language abilities and the reading process. J. B. Carroll (1970) examines components of the reading process, based on the child's knowledge of the language he is to read. He cites what he feels are neglected relationships between reading and language

stating that language is vital to a child's well-being whereas reading is an ancillary skill (1966).

Wardhaugh (1971) points out differences between language acquisition and beginning reading feeling that children who are asked to learn how to read are well on their way to linguistic maturity. On the other hand, Ryan and Semmel (1971) theorize that although the acquisition process may not be the same (Wardhaugh, 1971) reading is an active language process. Y. Goodman (1976) suggests that if young children know from the beginning that beginning reading is similar to listening, their knowledge of the language could be put to better use.

Studies (Bennett, 1942; Biemiller, 1970; Clay, 1968; K. S. Goodman, 1968; Weber, 1970) suggest that readers utilize linguistic cues.

In general it is felt that (1) beginning readers treat reading as if it were language and that this should be considered when dealing with reading problems (Y. Goodman & Burke, 1969) and (2) that research in reading should be based on psycholinguistics (K. S. Goodman, 1969).

Ruddell (1970, p. 21) has pointed out the scarcity of school age language samples as a consequence of the general view that linguistic mastery is complete by school age. Because much of the research has been done using beginning readers, this researcher has used "seasoned" readers in an attempt to show a similarity in syntactic development in language and reading using a psycholinguistically based language sampling procedure and psycholinguistically based reading analysis.

CHAPTER III: DESIGN OF THE STUDY

This chapter will describe the subjects, the two instruments used for measuring language and reading skills, and the testable hypotheses. The section on analysis will contain a discussion of the two research tools used.

Sample

The subjects used were three male children attending public elementary school in southern Ontario. These children were selected on the basis of their performance on the Wechsler Intelligence Scale for Children. Descriptive and educational information for each of the subjects is contained in Table 1.

An examination of the table indicates that the average verbal score is 2 standard deviations below the mean and the average performance score is 2 standard deviations above the mean.

Instruments

Each subject had two sessions with the author, of approximately forty-five minutes each. The first session consisted of a spontaneous, tape-recorded conversation between the child and the researcher. The child was encouraged to talk about his particular interests. If the conversation lagged, the child was shown pictures from Starting Points in Language A (Hooper, 1971, Pp. 52, 53) and was again encouraged to comment. At about 30 minutes into the conversation, the subject was given

Table 3.1

Descriptive and Educational Information

	Grade	Chronological age	Sex	WISC		
				Full scale score	Verbal	Performance
Wayne	special education	10 yrs. 5 mos.	male	114	88	141
Gary	special education	11 yrs. 1 mo.	male	100	85	114
Eric	special education	11 yrs. 9 mos.	male	100	79	122

a building toy, Village Demontable and asked to construct a village and then comment on it.

The second session consisted of the administration of passages for oral reading taken from those included as part of the kit prepared by Y. Goodman and C. Burke (1972). The passages were chosen based on a suggested reading level given by each classroom teacher, so that an appropriate number of miscues would be generated. The Reading Miscue Inventory Manual: Procedure for Diagnosis and Evaluation (RMI Manual) by Yetta Goodman and Carolyn Burke (1972a) was the source of the testing and scoring procedures.

Design

Prior to the start of the first session the researcher spoke to the classroom teacher of each of the subjects to gather information concerning the subjects' interests and approximate reading levels. Each subject met with the researcher within a two week period.

At the beginning of the first session, the subject, alone in the room with the researcher, was told that she was interested in collecting samples of speech. The subject was then shown the tape recorder. An attempt was made to keep the recording sessions as alike as possible in a spontaneous conversational setting. Each conversation was opened, on the basis of an interest suggested by the classroom teacher, with a comment by the researcher. The student was then encouraged to dominate the dialogue. If a lull developed

the subject was invited to comment on pictures of animals, selected from Starting Points in Language A.

Thirty minutes into the first session the subject was then given a building toy so that he could construct a village. At this point the author could observe the subject manipulating and speaking for the village people. The subject was then informed that there would be a second session the next week where he would be asked to do some reading.

At the second session the subject, again alone with the researcher prior to the reading of the story, was told that this was not a test that would be graded but an experiment to see how children read. The student was then told that he was to read an entire story into the tape recorder; the story might be difficult, but that this was necessary for the study; and, if the student had any difficulty, the researcher would not help and he should try to figure out the word by himself. He was further told that after reading the story he would be asked to retell it.

The researcher then observed the miscues and reading behaviours such as finger pointing, squirming, and silent corrections, recording them on a prepared copy of the test, while the subject read the story. The only response made by the researcher at this time was an encouraging smile, nod, or response. No overt signs of frustration were shown by the subjects to cause the material to be changed for something easier (Y. Goodman & Burke, 1972a).

After completing the oral reading of the story, the subject was then asked to retell as much of the story as he remembered. When this was done the researcher then asked questions to encourage the subject to recall as much as he could in the identification and analysis of the characters, events, plot, and theme. Care was taken to ask questions using only information already provided by the reader.

Hypothesis

The major hypothesis of this paper is that deviance in syntax present in oral language will be evident in oral reading performance. Therefore if the subjects' scores in the DSS procedure are below those of normally developing children in the analysis of verbal performance, then the miscues in the RMI will fit into patterns of those who are not proficient readers. In children who are not proficient readers, a great percentage of their miscues leaves the grammar of the resulting passage changed and causes changes in the meaning of the reading material.

Analysis

After transcribing the audio tape of the conversation between the subject and the researcher the DSS procedure was used to evaluate the subjects' performances. The second 50 "complete, different, consecutive, intelligible, nonecholalic sentences" was the sample analyzed. To be considered a sentence, an utterance had to have

at least a noun and verb in subject-predicate relationship, except for imperatives.

Eight features were scored. The following is a brief description of each feature.

1. Indefinite pronouns and/or noun modifiers. The words in this classification are similar to indefinites and quantifiers. The list begins with early pivot words it, this (score 1), ranging to a more difficult set of quantifiers such as both, few (score 6).

2. Personal pronouns. A child is not given credit unless his pronoun selection meets the requirements of person, munber, gender, and case. Points range from 1 for 1st and 2nd person to 7 for own, oneself.

3. Main verbs. There is a detailed breakdown of verb development following a developmental pattern. Ranging from 1 point for uninflected verbs to 8 for modal auxiliary + be+verb+ing.

4. Secondary verbs. Secondary verbs occur when two kernal sentences are combined by transforming the second kernal verb into an infinitive, participle, or gerund. Points range from 1 for early infinitival construction to 6 for gerunds.

5. Negatives. Points range from 1 to 5.

6. Conjunctions. Caution must be used because many children have a tendency to introduce or join all utterances with and, and less often with so. Points range from 1 for and to 7 for therefore.

7. Interrogative reversals. The question transformation requires the reversal of the subject with the first auxiliary verb. Points range from 1 for copula is reversal to 5 for

reversal with 3 auxiliaries.

8. Wh-questions. The scoring involves the selection of the appropriate wh-word and its placement in the initial position. Score increases largely on a semantic basis. Points range from 1 for who or what to 5 for whose or which.

Because many important grammatical features are omitted from the DSS system (for example, the use of articles, plurals, possessive markers, prepositional phrases, adverbs, word order, word selection) an additional sentence point is added to the total sentence score if the entire sentence is correct in all respects.

The scores for each of the eight classifications as well as the additional sentence point were marked in the appropriate columns and then totaled (see Appendix A). The mean score per sentence was derived by dividing the total number of points. Also, a mean score for each classification was arrived at.

Additional miscues were identified and added to the prepared copy of the text after listening to the audio tape of the story. Miscues were identified as substitutions, omissions, insertions, and reversals. Regressions (repetition of words, phrases, or sentences) were noted. These often occur in the course of correction behaviour, abandoning a correct form, unsuccessfully attempting to correct or anticipating difficulty with a subsequent word. Partial words, non-words, dialect differences, intonational shifts, and long pauses were noted. The miscues were then entered onto the Reading Miscue Coding Sheet (Appendix C contains a sample sheet), according to

the directions given in the RMI Manual (p. 39 - 48).

The following is a brief description of the questions in the linguistic analysis of each miscue.

1. Dialect. Is a dialect variation involved in the miscue?

2. Intonation. Is a shift in intonation involved in the miscue?

3. Graphic similarity. How much does the miscue look like what was expected?

4. Sound similarity. How much does the miscue sound like what was expected?

5. Grammatical function. Is the grammatical function of the miscue the same as the grammatical function of the word in the text?

6. Correction. Is the miscue corrected?

7. Grammatical acceptability. Does the miscue occur in a structure which is grammatically acceptable?

8. Semantic acceptability. Does the miscue occur in a structure which is semantically acceptable?

9. Meaning change. Does the miscue result in a change of meaning?

All miscues were coded and analyzed for correction, grammatical acceptability, semantic acceptability, and meaning change. In addition, substitutions for single whole words were analyzed for graphic similarity, sound similarity, and grammatical function.

Intonation shifts and dialect miscues were marked in the appropriate columns with a check.

The category Graphic Similarity was marked for high similarity (Y), some similarity (P), and no similarity (N). Sound similarity was marked in the appropriate column in the same way. Grammatical Function was marked identical (Y), not similar (N), and not possible to determine the grammatical function (P). The category Correction was marked (Y) if the miscue was corrected, not corrected (N), and attempt to correct or unsuccessful correction attempt (P). Grammatical Acceptability was marked for acceptable grammatically to the entire sentence (Y), acceptable only to the preceding portion of the sentence up to the miscue(P), and not grammatically acceptable (N). Semantic Acceptability was coded in the same way as Grammatical Acceptability. Meaning Change was coded for extensive meaning change (Y), some meaning change (P), and no meaning change (N).

When the inventory questions had been answered for all of the miscues noted, Grammatical Relationship Patterns and Patterns of Comprehension were checked for each reader (RMI Manual, p. 81). These patterns determined the strengths and weaknesses used by the reader.

Grammatical Relationship Patterns were determined for each miscue by checking one of the 18 possible combinations consisting of Correction, Grammatical Acceptability, and Semantic Acceptability. The interrelationships of these categories indicate strength, partial strength, weakness, and overcorrection.

Patterns of Comprehension were determined by checking one of the possible 27 combinations consisting of Correction, Semantic Acceptability,

and Meaning Change. The interrelationships of these categories indicate strength, partial strength, or weakness.

Percentages were calculated for each subcategory in Graphic Similarity, Sound Similarity, Grammatical Acceptability, Grammatical Function, Grammatical Relationship Patterns, and Patterns of Comprehension. These percentages were then entered onto each individual Student Profile Sheet (see Appendix C for sample).

The retelling score was arrived at by listening to the audio tape and scoring the retelling sheet for character identification, character analysis, events, plot, and theme. This score was also entered on the Student Profile Sheet. Repetitions were also entered on this sheet.

A further analysis of each reader's miscues was done by dividing the text into thirds by lines so that each section was compared to the other in all the aforementioned categories in an attempt to provide information as to changes in reading strategies as the reader progresses through varying portions of the text.

Summary

The subject's scores in the DSS procedure and the miscues recorded in the RMI will next be examined to see which patterns emerge.

CHAPTER IV: ANALYSIS OF RESULTS

This chapter presents the results of the data obtained in terms of each individual subject. It is divided into three areas. The first section will consist of the descriptions of the DSS analysis of grammatical features of each individual's performance. The second section is comprised of the descriptions and analyses of each individual's performance of the RMI. The last section presents an examination of the patterns of syntactic development based on sections one and two.

Developmental Sentence Scoring : Individual Analyses

Eric's profile is based on fifty spontaneous consecutive sentences. Indefinite pronouns were mainly present at the first and third levels with one at the fifth. The mean score (obtained by dividing the total number of scores and dividing by the number of scores and dividing by the number of objects) obtained for indefinite pronouns was 1.4.

Personal pronouns were used at the first level, including first and second person. Plural pronouns were used at the first level, including first and second person. One wh-pronoun was used. The mean score per sentence of personal pronouns was 2.5.

The majority of main verbs used in 23 sentences were uninflected. Present and past tense markers were used on verbs with several copula and auxiliary verbs used at the first level. One obligatory "did+verb"

was used. The mean score obtained was 1.7.

Eight secondary verbs were used; three at the first level, three at the second level, and two at the fourth level. The mean score obtained was 1.63.

Negatives were used in six sentences. Those used were at the first and second levels with three of those at the second level as a double negative, for example, "they don't have no..." The mean score was 1.5.

Three conjunctions occurred- and, but, and so-at the first, second, and fourth levels. They were used in nine sentences with a mean score of 2.08.

No interrogative reversals or wh-questions were used.

A sentence point was obtained in 23 sentences yielding a mean score of .46.

With his low scores, Eric did not show particular strength in any area. His developmental score was 6.02. In relation to the percentiles of 160 children by six month age groups (Table 1) Eric falls into the 10th percentile of the 4-0 to 4-5 age group. It should be noted that only 23 of the sentences obtained the sentence point.

Eric's oral language behaviour is summarized in Table 2.

Gary's profile is based on fifty consecutive spontaneous sentences. He used indefinite pronouns in 18 of the sentences at the first, second, and third levels. He made some use of wh-pronouns, at the 6th level.

Table 4.1

Percentiles of DSS scores of 160 children by six-month age groups

Age group	N	SD	10th	25th	50th	75th	90th
3-0 to 3-5	20	1.00	5.02	5.63	6.30	6.97	7.58
3-6 to 3-11	20	0.84	5.61	6.12	6.69	7.26	7.77
4-0 to 4-5	20	1.51	5.46	6.38	7.40	8.42	9.34
4-6 to 4-11	20	1.24	6.57	7.32	8.16	9.00	9.75
5-0 to 5-5	20	1.75	6.80	7.86	9.04	10.22	11.28
5-6 to 5-11	20	1.70	6.74	7.77	8.92	10.07	11.10
6-0 to 6-5	20	1.70	7.66	8.69	9.84	10.99	12.02
6-6 to 6-11	20	2.07	8.41	9.66	11.06	12.46	13.71

(Lee & Canter, 1971, p. 335)

Table 4.2

DSS Behaviour of Eric

	Number of grammatical features used	Score obtained	Mean score
Indefinite pronouns	20	28	1.4
Personal pronouns	39	101	2.5
Main verb	57	102	1.7
Secondary verb	8	13	1.6
Negative	6	9	1.5
Conjunction	12	25	2.08
Interrogative reversal	0	0	0
Wh-questions	0	0	0
Sentence point	50	23	.46
Total	-	301	6.02

Main verbs were used in all fifty sentences with a mean score of 2.2 per sentence.

Secondary verbs were used in only three sentences but at the second and third levels. The mean score was 2.3.

Conjunctions were used in 24 sentences. All used were at the first level except for one at the second and one at the third. The mean score per sentence was 1.09.

No interrogative reversals or wh-questions were used.

Gary received sentence points for 28 sentences. This yields a mean score of .56. Gary's DSS score was 8.76. It should be noted that Gary received this score because of his frequent use of run-on sentences rather than his use of more complex, syntactically correct sentences.

Gary falls into the 10th percentile of children age 6-6 to 6-11. Gary's oral language behaviour is summarized in Table 3.

Wayne's profile is based on fifty consecutive sentences. It was noted that Wayne often used sound effects, for example, whistling, to emphasize a point. He also laughed and ummed an excessive amount.

Indefinite pronouns were present both the first and third levels. A few were at the fourth level. Indefinite pronouns were present in twenty-five sentences with a mean score of 1.1.

Also, mainly at the first with a few at the second and third levels, personal pronouns were present in 24 sentences to yield a mean score of 1.6.

Table 4.3

DSS Behaviour of Gary

	Number of grammatical features used	Score obtained	Mean score
Indefinite pronouns	23	38	1.6
Personal pronouns	61	149	2.4
Main verb	76	172	2.2
Secondary verb	3	7	2.3
Negative	3	9	3
Conjunction	32	35	1.09
Interrogative reversal	0	0	0
Wh-questions	0	0	0
Sentence point	50	28	.56
Total	-	438	8.76

Most main verbs used were uninflected as well as several past copulas. Main verbs were used in 50 sentences with a mean score of 1.9.

Secondary verbs were used in 2 sentences to yield a mean score of 2.5.

Negatives were used in three sentences, once as the stereotype "I don't know".

Conjunctions occurred in thirteen of the sentences. They were mainly of the first level to yield a mean score of 1.3.

Interrogative reversals were not used. A wh-question was used once to yield a mean score of 1.3.

It is interesting to note that twenty-six sentences received a sentence point. Noticeable was Wayne's lack of the subject "I" in many of his sentences. Wayne's DSS score was 5.6. In relation to the percentiles of DSS scores of 160 children by six-month age groups, Wayne falls into the 10th percentile of the 4-0 to 4-5 age group.

Wayne's oral language behaviour is summarized in Table 4.

Reading Miscue Inventory : Individual Analyses

Eric's profile is based on 48 miscues of 9.4 MPHW. Fifty-four percent of the miscues were substitution miscues. He utilized both graphic and sound cues effectively. Seventy and three tenths percent of his substitution miscues had high graphic similarity, 15% had partial similarity, and 14.3% had no similarity. Seventy and three tenths percent had high sound similarity, 12% had partial similarity,

Table 4.4

DSS Behaviour of Wayne

	Number of grammatical features used	Score obtained	Mean score
Indefinite pronouns	31	37	1.1
Personal pronouns	31	51	1.6
Main verb	69	133	1.9
Secondary verb	2	5	2.5
Negative	3	9	3
Conjunction	13	18	1.3
Interrogative reversal	0	0	0
Wh-questions	3	4	1.3
Sentence point	50	26	.52
Total	-	283	5.6

and 17& had no similarity.

Eric demonstrated a sense of grammatical function with 61% of his substitution miscues having identical grammatical function with the stimulus word. Eleven and six tenths percent were not the same and 26.6% were indeterminate.

Eric generally showed weakness in his use of grammatical relationships although he showed some strength. Forty-one and six tenths percent of his miscues showed weakness, 34.3% showed strength, 11.6% showed partial strength and 15.3% overcorrection. In comprehension 27.6% of his miscues showed no loss, 44.3% showed partial loss, and 25% loss. His retelling score was 41%.

Eric's use of graphic and sound cues was very good. He also showed a good understanding of grammatic function. Because he showed some strength in Grammatical Relationships, Eric seemed to be able to predict the correct grammatical structures.

Although he was able to recall many details of the story his comprehension of it was poor. It should be noted that 31% of his miscues were omissions. In order to read more efficiently Eric will have to learn to predict and anticipate meaning and use context. He will have to be made aware that he skips words.

Eric made the most miscues in the first portion of the story, 10.9 MPHW, indicating his least effective reading. His comprehension showed 40% partial loss and 20% loss. His grammatical relationships showed 40% weakness and 20% overcorrection, although he made 100% use of grammatical function. As he progressed through the second

portion of the text he generated fewer MPHWs, 7.1, made poor use of sound, graphic, and grammatical cues. In the third portion of the text he made more MPHWs, 9, and again showed high use of sound and graphic cues, some use of grammatical function, to show 90% partial loss, and loss of comprehension with 60% weakness in grammatical relationships.

Although Eric's MPHWs showed improvement in the second and third portions of the text and his use of sound, graphic, and grammatical cues was fairly effective, Eric's comprehension and grammatical relationships were poor. This shows that he is unable to make use of his knowledge of grammatical information.

Eric's miscue behaviour is profiled in Table 5.

Gary's profile is based on 75 miscues of 8.4 MPHW. Seventy-three percent of his miscues were substitution miscues. He did not utilize graphic or sound cues effectively. Twenty-six and three tenths percent of his substitution miscues had high graphic similarity, 22.6% had low similarity, and 30.6% had none. Forty-one and six tenths percent had high sound similarity, 19% had some, and 33% had none.

Gary demonstrated a strong sense of grammatical function with 61.3% of his substitution miscues haveing identical function with the stimulus word. None were not the same and 32.3% were indeterminate.

Gary showed some strength in his use of grammatical relationships with a score of 43%. However, 7.3% of his miscues showed partial strength, 38.3% showed weakness, and 9.6% overcorrection. In comprehension 69% of his miscues showed partial loss, 16% loss, and

Table 4.5

Miscue Behaviour of Eric

	Portion of text			Total
	1/3	2/3	3/3	
Miscues	10	21	17	48
MPHW	10.9	7.1	9	9.47
Substitutions	--	--	--	56%
Graphic similarity				
High	80	41	90	70.3
Low	20	25	0	15
None	0	33	10	14.3
Sound similarity				
High	80	41	90	70.3
Low	20	16	0	12
None	0	41	10	17
Grammatical function				
Same	100	25	60	61
Different	--	25	10	11.6
Indeterminate	--	50	30	26.6
Grammatical relationships				
Strength	40	33	30	34.3
Partial strength	0	25	10	11.6
Weakness	40	25	60	41.6
Overcorrection	20	16	0	15.3
Comprehension				
No loss	40	33	10	27.6
Partial loss	40	33	60	44.3
Loss	20	25	30	25

13.6% showed no loss.

Thus, Gary's use of graphic and sound cues is poor. This suggests further investigation into Gary's visual and auditory skills may be informative. He does show a very good understanding of grammatic function. Because he shows some strength in grammatical relationships, he is using his grammatical strengths where his miscues result in structures which are usually grammatically acceptable but often lack acceptable meaning.

In comprehension, Gary showed 13.6% no loss, 69% partial loss, and 16% loss. His retelling score was 56. Gary received most of the retelling points for his recall of the story details. As well, he understood the plot. Gary may have scored a 56 retelling score because the conceptual load of the story may have been suitable for him, but not the language usage.

Gary made the most miscues in the first portion of the text, 9.3 MPHW, showing improvement through the second, 8.3 MPHW, to the third 7.8 MPHW. He did not show however, more effective use of cues from the first through to the third portion of the text.

Gary's miscue behaviour is profiled in Table 6.

Wayne's profile is based on 76 miscues or 9.5MPHW. Ninety-four percent of his miscues were substitution miscues. Graphic cues were utilized effectively. Seventy and three tenths percent of his substitution miscues had high graphic similarity, 15.3% had some graphic similarity, and 9.3% had none. Sound cues were not utilized as effectively. Fifty-six and six tenths percent had high sound

Table 4.6

Miscue Behaviour of Gary

	Portion of text			Total
	1/3	2/3	3/3	
Miscues	24	26	25	75
MPHW	9.3	8.3	7.8	8.4
Substitutions	--	--	--	73%
Graphic similarity				
High	46	33	42	26.3
Low	20	38	10	22.6
None	33	28	31	30.6
Sound similarity				
High	40	38	47	41.6
Low	33	19	5	19
None	26	42	31	33
Grammatical function				
Same	66	61	47	61.3
Different	0	0	5	0
Indeterminate	33	38	31	32.3
Grammatical relationships				
Strength	26	61	42	43
Partial strength	13	4	5	7.3
Weakness	40	28	47	38.3
Overcorrection	20	4	5	9.6
Comprehension				
No loss	13	23	5	13.6
Partial loss	53	76	78	69
Loss	33	0	15	16

similarity, 31.6% had some similarity, and 7% had none.

Wayne showed strength in his use of grammatical function. Eighty-one percent showed some similarity, 3.6% could not be determined, 11% had different grammatical functions.

Wayne generally showed weakness in his use of grammatical relationships with a score of 48%. Six and six tenths percent showed overcorrection, 16.3% showed partial strength, and 28.6% showed strength. This showed that he is possibly unable to make use of his knowledge of grammatical information and has difficulty predicting the author's use of grammatical structures.

In comprehension 49% of his substitution miscues showed loss, 24.6% showed partial loss, and 28.6% showed no loss. His retelling score was 14.

Wayne was able to recall only a few details from the beginning of the story. Although many of his miscues showed understanding of grammatical function, most of the miscues occurred in sentences only partially grammatically and semantically acceptable resulting in extensive meaning change in many of the sentences.

In the first portion of the text, Wayne did his most effective reading, 7.9 MPHW, 10.4 MPHW in the second portion, and 11 MPHW in the third portion.

This indicates that Wayne is not using proper correction strategies. His weakness in grammatical relationships increased from 22% in the first portion, to 56% in the second, and 66% in the third.

His loss of comprehension increased from 29% in the first portion, to 52% in the second portion, to 66% in the third.

Wayne's miscue behaviour is profiled in Table 7.

Patterns of Development

The section following will analyze date based on the DSS procedure and the RMI to determine if the subject's profiles showed any patterns.

In examining Eric's syntactic behaviour as categorized by the DSS procedure applied to the RMI, 38% of Eric's miscues fall into three of the categories: personal pronouns; main verbs; and negatives. Of the personal pronouns from the text none of the miscues had identical grammatical function with the stimulus word. Seventy-five percent of them showed partial loss in comprehension, and 25% showed loss. Fifty percent showed weakness in grammatical relationships, 25% showed partial strength, and 25% showed strength. Three of his personal pronouns (that is, 75%) from the text were wh-pronouns at the sixth level. Only one of 39 pronouns used in his spontaneous speech was at this level.

Eighty percent of Eric's miscues in main verbs had identical function with the stimulus word, 10% were indeterminate and 10% were not the same. Thirty-three percent of his miscues showed no loss in comprehension whereas 35% showed partial loss and 41% showed loss. Thirty-five percent of Eric's miscues showed strength

Table 4.7

Miscue Behaviour of Wayne

	Portion of text			Total
	1/3	2/3	3/3	
Miscues	33	21	22	76
MPHW	7.9	10.9	10.5	9.5
Substitutions	--	--	--	94%
Graphic similarity				
High	80	65	70	71.6
Low	9	25	17	17
None	9	10	11	10
Sound similarity				
High	61	40	70	57
Low	32	55	17	34.6
None	6	5	11	7.3
Grammatical function				
Same	87	80	88	85
Different	3	10	0	4.3
Indeterminate	9	10	11	10
Grammatical relationships				
Strength	38	20	25	27.6
Partial strength	25	15	10	16.6
Weakness	22	60	65	49
Overcorrection	12	5	0	5.6
Comprehension				
No loss	38	25	25	29.3
Partial loss	32	20	15	22.3
Loss	29	55	60	48

in grammatical relationships, 8% showed partial strength, 58% showed weakness, and 8% showed overcorection. Five of the main verbs were at the first level of difficulty in the DSS procedure and seven were at the third. Of the fifty-seven verbs scored in Eric's spontaneous speech, 33 were at the first level, and 24 were at the third level, and one at the fifth level. Although most of Eric's use of main verbs in spontaneous speech was at the first and third levels he appeared unable to apply his knowledge of grammatical information in speech to his reading.

Eric used 6 negatives in his spontaneous speech sample, 3 at the second level, and three at the first. On the RMI, there were three negative miscues from the text. One hundred percent of the miscues were identical in grammatical function to the stimulus word. In comprehension, 100% showed partial loss. In grammatical relationships, 33% showed strength, and 66% overcorrection. Of his negative miscues, one was at the first level, and two were at the second level.

From the above information, it can be inferred that although Eric understood the grammatical function of main verbs and negatives at the first and third levels he was unable to successfully apply this same knowledge to his reading. Eric made little effort to correct any of his miscues.

Eric's reading behaviour is profiled in Table 8.

In examining Gary's syntactic behaviour as categorized by the DSS applied to the RMI, 38% of Gary's miscues fall into the following

Table 4.8

DSS Behaviour of Eric on the RMI

	Personal pronouns	Main verbs	Negatives
Grammatical function			
Same	0	80%	100%
Different	0	10%	0
Indeterminate	100%	10%	0
Comprehension			
No loss	0	35%	0
Partial loss	75%	35%	100%
Loss	25%	41%	0
Grammatical relationships			
Strength	25%	35%	33%
Partial strength	25%	8%	0
Weakness	50%	58%	0
Overcorrection	0	8%	66%

categories: indefinite pronouns, 2%; personal pronouns, 15%; main verbs, 57%; and, conjunctions, 2%.

Of the six personal pronouns from the text, 60% of Gary's miscues had identical grammatical function with the stimulus word and 40% did not have the same function. Eighty-three percent of the miscues showed a partial loss in comprehension while 18% showed loss. Eighteen percent of the miscues showed strength in grammatical relationships, 33% showed partial strength, while 50% showed weakness. Two of the pronouns were at the first level, two were at the third level, and two at the sixth. There was little attempt at correction, with meaning change in all but one. Sixty-one personal pronouns were counted in Gary's spontaneous speech sample. They were at the first, second, and third levels, with a few at the sixth.

Gary had 21 miscues of main verbs. Eighty-three percent had the same grammatical function with the stimulus word, 17% did not. Thirty-three percent of the miscues showed no loss in comprehension, 57% showed partial loss, and 9% showed loss. In the area of grammatical relationships, 42% showed strength, 9% showed partial strength, 23% showed weakness, and 23% showed over-correction. Fourteen of his miscues were at the third level, one at the fifth, one at the sixth, and the rest at the first and fourth. Gary mainly used verbs at the first and third levels in his spontaneous speech. In the RMI, Gary was successful in

correcting 28% of the miscues. Many of the miscues were semantically and grammatically acceptable showing that although Gary understood the use of main verbs in language, he seems unable to transfer this knowledge consistently to reading.

An indefinite pronoun was miscued once. He did not attempt to correct it. It resulted in partial loss of comprehension but showed strength in grammatical relationships. Gary used indefinite pronouns in 36% of his spontaneous sentences, at the first, second, and third levels. The indefinite pronoun in the reading sample was one he used correctly in his spontaneous speech sample.

A conjunction miscue was noted once. Its grammatical function was the same as the stimulus word. There was no attempt at correction. It resulted in partial loss in comprehension but showed strength in grammatical relationships. This conjunction was at the sixth level. Gary used mainly level one conjunctions along with one level two, and one level three in his spontaneous speech sample.

From the above information, it appears that although Gary seems to use the various categories as outlined in the DSS procedure with some proficiency, he had difficulty transferring this knowledge to reading.

Gary's reading behaviour is profiled in Table 9.

In an examination of Wayne's syntactic behaviour as categorized by the DSS procedure as applied to the RMI, 28% of Wayne's total miscues fall into the following categories: indefinite pronouns, 3%;

Table 4.9

DSS Behaviour of Gary on the RMI

	Indefinite pronouns	Main verbs	Personal pronouns	Conjunction
Grammatical function				
Same	100%	83%	60%	100%
Different	0	0	0	0
Indeterminate	0	17%	40%	0
Comprehension				
No loss	0	33%	0	0
Partial loss	100%	57%	83%	100%
Loss	0	9%	18%	0
Grammatical relationships				
Strength	100%	42%	18%	100%
Partial strength	0	9%	33%	0
Weakness	0	23%	50%	0
Overcorrection	0	23%	0	0

personal pronouns, 14%; main verbs, 57%; and, negatives, 3%.

One indefinite pronoun at the fourth level was miscued. It had identical grammatical function with the stimulus word. It was uncorrected and led to a minimal change in meaning. It showed 100% partial loss and 100% partial strength. Of 31 indefinite pronouns used in Wayne's sample of spontaneous speech, two were at the fourth level, with the balance mainly at the first level.

Four personal pronouns were miscued. Fifty percent showed identical grammatical function with the stimulus word, 50% were indeterminate. There was some attempt at correction. Twenty-five percent showed no loss in comprehension, 25% showed partial strength, and 50% showed weakness. Two of the personal pronouns were at the sixth level, one was at the third, and one was at the first. Wayne used mostly first level pronouns, with a few at the second and third levels in his spontaneous speech sample. It appears that Wayne is not especially proficient in his use of personal pronouns in speech and thus is unable to transfer successfully to reading.

Sixteen main verbs were miscued. They all showed identical grammatical function with the stimulus word. Eighteen percent of the miscues were corrected. Seventy-five percent had no attempt at correction. Twenty-five percent showed no loss of comprehension, 37% partial loss, and 37% loss. Twenty-four percent of the miscues showed strength in grammatical relationships, 25% showed partial

strength, 50% weakness, and 6% overcorrection. Most of the main verbs in Wayne's spontaneous speech sample were at the first and third levels. One can infer that although Wayne appears to be proficient with main verbs at the first and third levels in language he has yet to apply his grammatical knowledge to reading, to have the ability to anticipate as well as complete grammatical structures without losing the meaning.

One negative miscue is in the text. Its grammatical function was not the same as the stimulus word. Comprehension showed partial loss and its grammatical relationship showed weakness. The negative was at the first level. Two negatives were used in Wayne's spontaneous speech sample, one at the first level, the other at the second.

Wayne's reading behaviour is profiled in Table 10.

Table 4.10

DSS Behaviour of Wayne on the RMI

	Indefinite pronouns	Personal pronouns	Main verbs	Negatives
Grammatical function				
Same	100%	50%	100%	0
Different	0	50%	0	0
Indeterminate	0	0	0	100%
Comprehension				
No loss	0	25%	25	0
Partial loss	100%	25%	37%	100%
Loss	0	50%	37%	0
Grammatical relationships				
Strength	0	25%	24%	0
Partial strength	100%	25%	25%	0
Weakness	0	50%	50%	100%
Overcorrection	0	0	6%	0

CHAPTER V: SUMMARY AND CONCLUSIONS

The purpose of this study was to determine linguistic competence using Lee and Canter's Developmental Sentence Scoring procedure, to determine patterns of strength and weakness in grammatic relationships using Goodman and Burke's Reading Miscue Inventory and to use these to examine any relationships between the use of syntax in oral speech and oral reading.

Results of the research indicate that oral language behaviour is closely tied to oral reading behaviour. As has been mentioned earlier, the small number of subjects precludes a general statement, but the statistics derived from this study lend support to other literature in the field.

Conclusions

The results of the study indicate that children bring their knowledge of language to the reading process. The three subjects studied had verbal abilities well below the accepted mean for their age group as indicated by their verbal scores on the WISC. On the DSS each of the subjects used mainly the first and second levels or the early developmental phases of the scored grammatical features. Each of the three subjects received only about half of the available sentence points indicating that only about half of the sentences scored on the spontaneous speech samples were correct syntactically in all respects. Kolers (1970) stated that the more of a grammatical structure one has grasped, the less likely he is to make an error. Thus their syntactic abilities, as examined using Lee and Canter's

DSS procedure, appeared to be well below the accepted norm for their ages.

Results from the RMI indicate that the three subjects of this study are not yet proficient readers. Many of the miscues as recorded under grammatic function have left the grammar of the resulting passage changed. Also many of the miscues have caused extensive change in meaning. Correction strategies were not used effectively by the subjects. There was generally little distinction between acceptable and unacceptable miscues. This appeared in the comprehension scores that showed high partial loss and loss. The subjects generally made more miscues as they progressed through the oral reading along with a decline in grammatical relationships and comprehension scores. There were observable signs of word-by-word reading, finger pointing, repetition, and overcorrection. Graphic, sound, and grammatic function cues were used rather than the more complex semantic and syntactic cueing systems. Whereas, a skilled reader operates on a level that treats words as symbols and operates on them in terms of their meanings and their relations to other symbols, rather than a mouthing of the text before him (Kolers, 1970, p. 112).

In an examination of the miscues of the RMI, as categorized according to the grammatic features of the DSS procedure, results indicate that if the subject used, for example, few personal pronouns at the first and second levels, the miscues that were not of the first and second levels did not always show identical

grammatical function with the stimulus word; they often caused meaning changes in the reading material; and, generally uncorrected, they showed loss of comprehension, and weakness in grammatical relationships.

Discussion of Results

Substitution miscues were analyzed in this paper because they were the type of miscue most often made in the readings. According to Clay (1968) there is a high incidence of syntactic equivalence between error substitutions and the textual stimulus.

The retelling scores in this study were very low. It may not be completely the fault of the subjects. The passages used for miscue analysis are selected because they are sufficiently difficult to generate an adequate number of miscues. Faced with this level of difficulty to challenge their reading abilities, the subjects may not be able to give much attention to the specifics, generalizations, or major concepts of the passage.

An observation of the study is that both graphic and sound cues were utilized fairly effectively by the readers. There were not many corrections made. Generally corrections stem from an awareness that not all the words fit. It is possible that if a child is not a proficient user of the language he is reading, he is often unaware of the relationship between words and is thus unable to anticipate and predict the author's grammatical structures.

Although there are many instruments available for analyzing children's speech, few are practical enough to be easily used by the teacher. Lee and Canter's DSS is easy to use and measures specifics. But, because there is no prepared manual much of the testing procedure and analysis, it is a guessing game.

This study has yielded information that was not previously known about the subjects that can be used as a basis for curriculum planning. It has shown that the teaching these children are receiving is inadequate for their needs. For example, Wayne, who has shown a high correspondence between the syntax used in reading and language should not be receiving more help in phonics but should be receiving very basic language remediation so that he may be able to use pronouns. Unless he is able to use the reading clues offered in language, he will not become a proficient reader. Both Gary and Eric have shown that their language usage appears to be well below their age level and that their comprehension skills are ineffective. They should be receiving help with basic language skills and comprehension strategies so that they may be able to eventually learn to read effectively. Thus this study can be used as the basis for a diagnosis and then a prescription for language and reading skills.

Suggestions for Further Research

There are sufficient indications from the present study that further examination of the DSS procedure as a diagnostic tool

is warranted. More normative data could be gathered for it to have greater reliability. As well, the age groups of the children examined could be increased to make it a more useful tool to survey school age children.

The present study could be extended to include more subjects, both with and without diagnosed language disabilities to be able to yield a statistical statement.

It may also be interesting to see the performance of students with a diagnosed language disability examined on high interest and comprehension, low level syntax stories to see if any syntactical patterns emerge.

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APPENDIX A : SAMPLE

DSS Analysis

Gary

	Indefinite pronoun	Personal pronoun	Main verb	Secondary verb	Negative	Conjunction	Interrogative reversal	Wh- questions	Sentence point	Total
One died.	2		3						1	6
I had one old, forget what they're called and that died and I got a small one so old died and that died.	1,2	2,6,1,3,6,1,6	3,1,3,3,3,3,3			1,1,1				49
Then I bought a fantail and another one of them fish that died.	2	1,6	3,3			1				16
Then the fantail died then the other thing died and I still got Snoopy.		3,3				1				7
You have to feed him once a day I think.		1,1,2	1	2					1	8
No, somebody gave it to us.	3,1	3	3						1	11
They look funny.		3	1						1	5
That one said something and that one's mad at him.	2,3,2	1,2	3			1			1	15
You haven't had babies yet?		1	6		5				1	13
He's mean.		2	1						1	4
Because he said that.		2,6	3			3			1	15
In Africa and South America, I think.		1	1			1				3
Giraffes, hippotamuses, rhino, lions I think, and monkeys and apes, and bats.		1	1			1,1,1				5
Yes, there's a big thing there that you have to open the door and go in go out.	1		1				1			3
It's a glass and you just see them hanging up on the tree.	1	1,3	1,1	3			1		1	12
I been to Toronto Metro Zoo with our class.	1	3								4
I'm going again.		1	3						1	4
Yes but that was when I was in grade 2.		1	3,3				1		1	9

(Gary)

"War on Small Deer!"

One day a Small Deer wanted to go to the other side of the river to eat the sweet fruit. there were As soon as he came to the river, and the crododiles crocodiddle that put their huge heads up out of the water.

"War on Small Deer! War so on Small Deer!" so they roared.

One crocodile crocoddile rushed out of the water to bite see Small Deer.

Small Deer pushed a small stick in the crocodile's mouth.

Then Small Deer cried tried, "You bit bite my leg. Let go! Let go!"

The crocodile was fooled floated. He thought the stick was really Small Deer's leg. So he bit down hard on the stick.

All the other crocodiles laughed no. Now when crocodiles laugh, they shut their eyes. Then When they had all shut their eyes to, Small Deer ran away.

But he still wanted a the sweet fruit on the other side of the river.

READING MISCUE INVENTORY CODING SHEET

Reader Gary Date Selection War on Small Deer

Teacher Class School

Miscue Number	Reader	Text	QUESTION TOTAL	COLUMN TOTAL / PERCENTAGE	PATTERN TOTAL	COLUMN TOTAL / PERCENTAGE
1	a	.				
2						
3	were	are				
4	and	as				
5	and	as				
6	crocodiddle	crocodile				
7	that					
8		cut				
9	so	on				
10	see	bite				
11	tried	cried				
12	bite	bit				
13	floated	fooled				
14	no	now				
15	then	when				
16	to	all				
17	a	the				
18		there				
19		looked				
20	answered	answer				
21	here	are				
22	are will	you will				
23		with				
24	And	Said				

DIALECT 1

INTONATION 2

GRAPHIC SIMILARITY 3

SOUND SIMILARITY 4

GRAMMATICAL FUNCTION 5

CORRECTION 6

GRAMMATICAL ACCEPTABILITY 7

SEMANTIC ACCEPTABILITY 8

MEANING CHANGE 9

COMPREHENSION — No Loss / Partial Loss / Loss

GRAMMATICAL RELATIONSHIPS — Strength / Partial Strength / Weakness / Overcorrection

APPENDIX D : SAMPLE

READING MISCUE INVENTORY READER PROFILE

Reader Gary Date _____ Selection "War on Small Deer"

Teacher _____ Class _____ School _____

COMPREHENSION PATTERN

Percent of relationships of No Comprehension Loss to Partial Comprehension Loss to Comprehension Loss

Reader's Use of Reading Strategies:

- Highly Effective ☐
- Moderately Effective ☐
- Some Effective ☒
- Ineffective ☐

Percentage Line

0 10 20 30 40 50 60 70 80 90 100

no loss | partial loss | loss

Frequency Line

RETELLING SCORE 56

SOUND/GRAPHIC RELATIONSHIPS

Sound			Graphic		
High	Some	None	High	Some	None

GRAMMATICAL RELATIONSHIPS

Function			Relationships			
Identical	Indeterminate	different	Strength	Partial Strength	Weakness	Overcorrection

Repeated and Multiple Miscues

Reader	Text	Frequency of Miscue Occurrence	Frequency of Text Item Occurrence	Occurrence of Correction	Reader	Text	Frequency of Miscue Occurrence	Frequency of Text Item Occurrence	Occurrence of Correction
so	on	2	13	0					
crocodiddle	crocodile	2	14	1					
and		2	addition	0					
the	that	2	3	0					
a	the	2	47	0					
crocodiles	crocodile	4	14	0					
animal	animals	2	3	0					
jumping	jumped	2	3	0					